DOCUMENT RESUME

ED 204 049 RC 012 761

AUTHOR	Black, Talbot, Ed.: Hutinger, Patricia, Ed.
TITLE	Effective Strategies in the Collection and Analysis of Cost Data in Rural Programs. Making It Work in Rural Communities. A Rural Network Monograph.
INSTITUTION	Western Illinois Univ., Macomb. Coll. of Education.
SPONS AGENCY	Office of Special Education (ED), Washington, D.C.
PUB DATE	Jun 81
GRANT	G007801853
NOTE	55p.: The Handicapped Children's Early Education Program (HCEEP) Rural Network is an association of professionals representing educational programs for young handicapped children in rural communities. For a related document, see RC 012 775.
AVAILABLE FROM	Rural Network, College of Education, Room 27, Horrabin Hall, Western Illinois Univ., Macomb, IL 61455 ($3.00).
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Computer Oriented Programs: *Cost Effectiveness: Data Analysis: *Data Collection: *Disabilities: Early Childhood Education: Management Systems: *Program Costs: Program Evaluation: *Rural Areas: *Special Education: Young Children
IDENTIFIERS	*Handicapped Childrens Early Education Program

ABSTRACT

The purpose of this monograph is to present broad considerations related to the collection and analysis of cost information on programs for young handicapped children and to illustrate those considerations with examples of systems used in four rural Handicapped Children's Early Education Program (HCEEP) projects. The two papers in Section I represent two broad and interrelated dimensions of cost analysis. The first paper presents issues, multiple uses, and a framework for classifying systems of cost data collection and analysis. The second paper presents a more specific, yet comprehensive, planning approach to setting up a cost analysis system. Section II consists of papers which describe methods used by four different projects to collect, analyze, and present cost data. Each project description emphasizes personnel costs as well as factors related to time and activities. All reflect the need to capture time with some form of log. (Author/CM)

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ED204049

MAKING IT WORK IN RURAL COMMUNITIES

Effective Strategies in the Collection and Analysis of Cost Data in Rural Programs

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A Rural Network Monograph
Edited by Talbot Black and Patricia Hutinger

hceep Rural Network

About the Rural Network Monographs

The State of the Art Task Force has as its responsibility the collection and distribution of information related to effective strategies for delivering services to rural young handicapped children and families. During 1980 - 81, a series of monographs was undertaken by contributors across the country under the editorial direction of Patricia Hutinger. Contents of the first set of monographs (see back cover) reflects the most pressing needs of rural HCEEP projects. Other topics are under consideration by members of the Rural Network and will be forthcoming.

This monograph was developed pursuant to grant G007801853 from the U.S. Department of Education. Those who undertake such projects under government sponsorship are encouraged to express freely their judgement in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Department of Education position or policy.

OSE Project Officer, Sandra Hazen

June 1981
The Rural Network
Western Illinois University Press

A RURAL NETWORK MONOGRAPH

EFFECTIVE STRATEGIES IN THE COLLECTION AND ANALYSIS OF COST DATA IN RURAL PROGRAMS

Edited by Talbot Black
Patricia Hutinger

Introduction by Patricia Hutinger

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June, 1981

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Increasing pressure from inflation, political change and concomitant resistance from taxpayers force programs for young handicapped children to deal with urgent questions related to program costs. Sometimes those programs are not prepared to deal effectively with the collection of useful cost information. Yet cost information must be available in order to accurately represent programs to a variety of audiences, including potential funding sources. Since social programs must compete for dwindling dollars, we must collect meaningful, accurate data.

Further, it is likely that rural social services, already sparse in comparison to urban program offerings, will suffer drastic reductions or, at best, zero growth unless those rural services can present reliable, believable cost data and evidence of effectiveness. The purpose of this monograph is to present broad considerations related to the collection and analysis of cost information in programs for young handicapped children, then to illustrate those considerations with examples of systems used in four rural Handicapped Children's Early Education Program (HCEEP) projects. A second monograph will describe cost effective delivery strategies for early childhood programs operating in rural settings and will include both program descriptions and cost data by budget categories.

Although this monograph was developed out of the Rural Network, its contents can be applied to programs in a variety of settings. Not only is cost information needed for use with external audiences, but also it provides service providers who collect such data with a clearer understanding of the costs of providing services. Such understanding enables us to fulfill our responsibility of providing services in the most cost efficient manner possible.

May, 1981
Chapel Hill, North Carolina
Macomb, Illinois

Talbot Black
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CRITICAL CONSIDERATIONS: AN OVERVIEW OF COST ANALYSIS

CRITICAL CONSIDERATIONS
AN OVERVIEW OF COST ANALYSIS

Introduction

The two papers in the following section represent two broad and interrelated dimensions of cost analysis. The first paper, global in its approach, presents issues, multiple uses, and a framework for classifying systems of cost data collection and analysis. The second paper presents a more specific, yet comprehensive planning approach to setting up a cost analysis system.

While Gentry considers the ideal factors for cost information, he cautions against the over-collection of data, the relative meaninglessness of unit costs without additional data about benefits, and the dangers in using cost information for evaluation purposes. Five multiple uses for cost data are outlined. He then provides a three-level simple to complex framework for classifying approaches to cost analysis.

Black's paper builds on the Gentry paper, describing a planning approach to setting up a cost analysis system. Consideration of cost information needs of various targets, the determination of program components and activities, and the capture of three types of costs are examined. Strategies for accomplishing tasks in each area are presented.

Both Gentry and Black refer to the benefits of cost analysis, but within different contexts. Gentry's description of multiple uses for cost information encompasses benefits similar to Black's last section on the benefits of cost analysis. Similar emphasis is placed on the importance of cost information for program monitoring and for making management decisions.

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COST ANALYSIS: ISSUES, USES AND APPROACHES

Dale Gentry

An historic practice exists in the United States to mandate a variety of human services at public or private expense. Those services most firmly established provide for essential health and safety needs; for example: sewage treatment, food inspection, and police and fire protection. Other services seen as improving the quality of human life have followed, such as public education (including education for the handicapped), mental health services, and basic legal services for the poor. Additional basic human needs exist in the United States that have, however, received only a partial social mandate. These include early education programs for handicapped children.

Clearly, a multitude of human service programs compete for available public resources. Those services that have not yet been securely established compete most directly for funds remaining after secure programs have received their allocations. Those programs that succeed in attracting such support will be those that demonstrate most convincingly their need, document the cost for services, and show the benefit of those services. At the least, early intervention programs, which belong to the group of services that have not yet been securely established, will have to document their costs and outcomes if they are to compete successfully for public funds. The purpose of this paper is to consider the issue of cost as it relates to early education programs.

Ideally, it is desirable not only to analyze costs for the delivery of services, but also to evaluate those costs in terms of the actual benefits that result. Such a cost-result analysis enables judgements both about the worth of a given service delivery approach and about the relative merits of different service delivery approaches. The results of ultimate importance, of course, in early education programs are improvements in child performance.

It is true, however, that programs and practitioners are still trying to develop methodologies that reliably and uniformly measure changes in child behavior, and to demonstrate the extent to which child gains result from a given program. Actually conducting cost-benefit analyses in terms of child gains awaits refinement of the technology of evaluation. It is possible, however, to conduct other cost-result analyses, such as the unit cost to serve a given child. But we need to understand at the outset that the cost to serve a child may be relatively meaningless without additional data about the benefits that accrue to the child.

Multiple-Uses for Cost Information

An important consideration in collecting and analyzing cost data is identifying the uses to be made of the cost information. The specific information collected will depend partially on its intended uses. It is important not to collect much information that will not be needed or used, since cost analysis itself can become a significant expenditure of resources.

There are at least five major uses for cost information. One use is for program monitoring and management decisions. The manager who knows the cost for service delivery and related program activities can adjust spending rates, alter program practices, and re-allocate resources to more effectively use available funds. A second use of cost information is reporting and billing. Most early education programs must report to individuals within the organization and to one-or-more external agencies. Usually such reports necessarily include only cost expenditure by major category. However, some reports are for billing or charging purposes and require cost information about specific individuals, activities, or project components. Third, cost information can be used for planning purposes. Past data provide a reasonable basis for predicting expenditures for future project activities. Similarly, other persons who plan to conduct similar activities are in a better position to predict cost if they have historic cost data. For planning purposes it is important to obtain cost data on each major project function and/or component. A fourth use of cost data is to assist in obtaining funds for early education programs. Ideally such data which would provide cost descriptions, would be accompanied by evidence of child gains and/or other program accomplishments. A fifth use of cost data is for evaluative purposes. At the simplest level, data can be used to describe and judge the cost of a given approach or components of that approach. One could even make cost-comparisons among different approaches, and/or components.

However, when cost data is used for evaluative purposes together with evidence of child gains some important cautions should be noted. First, it is very difficult to scale child gains so they are equal or comparable across age or developmental levels. It becomes exceedingly difficult, then to assert that children of different levels have made similar amounts of actual progress when they numerically show the same gain. Second, it is difficult to determine how much of the gain that children demonstrate actually results from the intervention. Relating costs and gains becomes tenuous on the basis of this problem alone. Even if we can obtain realistic viable measures of child gain, it is unlikely that cost-benefit data will directly indicate which practices to adopt. It is possible that costs and gains will co-vary. We will still be left to determine how much to spend for a given outcome.

Approaches to Cost Analysis

There are at least three different levels of cost data. The first level is very global, and consists of determining total costs expended by budget category, e.g. personnel, operating expense, capital outlay,

and travel. For a given project one can assess the overall cost or cost by category and relate that to other information such as the total number of children served and the length of time they received services.

A second way of assembling cost data is by program component. At this level of data collection and analysis one identifies the different major components of a project and determines budgeted and/or actual resources allocated to each category. Categories, for example, might consist of child services, administration, evaluation, and dissemination. This approach allows a more finely detailed analysis of project costs. It would be possible to complete a very detailed analysis of project costs by dividing components into subcomponents and recording resource expenditures for each.

A third procedure for determining and analyzing costs is by objective. With this approach all project elements are specified as objectives, and concomitant activities (or events) and outcomes. Some form of record is established to identify who is responsible for or completes an activity/objective and what the categories of activity include. Each staff member keeps a log or record of his/her activities, by objective, and submits them for recording. Costs for each objective can be compiled, reported and analyzed.

Consideration of cost information leads to a number of issues related to programs for young handicapped children. Although analysis of costs for delivery of services in relationship to the actual benefits that result would ideally be available, in reality that information is not readily available. Unit cost may be relatively meaningless without additional data about benefits that accrue to the child.

Cost information has multiple uses, including program monitoring and management decisions, reporting and billing, planning, assisting in obtaining funds, and evaluating. Three levels of approaches to cost analysis efforts can be identified: 1. total costs expended by budget category; 2. costs for various program components; and 3. costs for specific objectives. Identification of the potential uses of cost information is a necessary condition in determining the most useful approach for a specific project.

A PLANNING APPROACH TO COST ANALYSIS

Talbot Black

A successful cost analysis system not only captures the costs of a program accurately, but also provides cost information in a timely way for a variety of audiences and functions. As with any systematic and long-term endeavor, cost analysis requires careful and thoughtful planning. The purpose of this paper is to describe a planning approach for setting up a cost analysis system. This approach, which was developed through a series of TADS small group technical assistance meetings, illustrates how planning procedures are applied to the task of establishing a cost analysis system.

Two steps must be taken by project staff in order to begin to conceptualize a cost analysis system: (1) identify the target audiences for cost information on the program, and (2) define the program's basic components and activities.

Cost Information Needs of Target Audiences

Appropriate target audiences for cost information are, of course, unique to each project and can best be identified by looking at a project's long-term goals. For example, if one of a project's long-term goals is securing funding from its local education agency (LEA), then specific target audiences for cost information might be the local superintendent, the school board, parent advocates, and other key individuals in the community. If another project goal is helping interested school systems start programs, then the appropriate targets for cost information might be special education personnel in other school systems, or perhaps an early childhood/special education consultant at the state education agency (SEA) level.

Table 1 on the following page describes several target audiences for cost information. Appropriateness of audience will vary from project to project.

After a project identifies the target audiences, the next planning step is listing the cost information needs of each target, i.e., what cost information must be conveyed to the target in order to accomplish the goals of the project. Cost information needs will be basically the same for all targets, but there will be some variations. An effective cost analysis system should take those variations into account so that the information provided can be properly adapted.

TABLE 1

POTENTIAL TARGET AUDIENCES
FOR COST INFORMATION

AUDIENCE	DESCRIPTION	PROJECT GOAL	EXAMPLES
ACCOUNTABILITY AUDIENCES	organizations/agencies to whom a project is accountable for the resources it spends	to demonstrate fiscal responsibility	a project's local fiscal agency, OSE, advisory board
FUNDING SOURCES	organizations/agencies that can provide financial support, both monies and in-kind services	to maintain and/or expand the project's services and activities	local and state agencies, United Fund, private foundations
OTHER SERVICE PROVIDERS	organizations/agencies that are providing or supporting services to children and families, or wish to start providing services	to provide help/knowledge for fiscal planning	other local education agencies, head start, day care, state education agency
ADVOCACY GROUPS	organizations/groups that advocate or wish to advocate for increasing the quantity and quality of services for young handicapped children and their families	to support advocacy for improved services	parent groups, CEC, OSE, other rural advocacy groups
POLICY MAKERS	individuals and groups that make (or influence) public policy concerning the provision of services to young handicapped children and their families	to influence public policy	state legislature, local school board, U.S. Congress
OTHER PROFESSIONALS	individuals/organizations and groups that represent the field of early education for the handicapped	to provide new knowledge to the field	CEC, NAEYC, AERA, OSE

One additional target for cost information that should not be ignored is the project itself. In fact, the project director and the rest of the staff may be the most important target audience to consider as a cost analysis system is designed. The staff must ask themselves what they need to know about the costs of the program in order to improve its efficiency and effectiveness.

Program Components and Activities

The second fundamental aspect of planning a cost analysis system is determining how the project's total program is to be sub-divided for cost analysis purposes. The program must be separated into its component parts, and then each part must be broken down into related program activities.

A typical HCEEP project has the following major components:

* services for children
* parent involvement
* staff development
* demonstration/dissemination
* evaluation
* administration/management

As the project's activities are identified and listed under each program component, these suggestions may be helpful. First, the activities should be categorized in the following way:

Ongoing activities -- those that occur on a daily, weekly or monthly basis and occur over and over again, e.g., teacher instruction in the classroom, home visits, staff meetings.

Periodic activities -- those that occur infrequently, but occur more than once, e.g., formal assessment of children, advisory board meetings, preparation of progress reports.

Second, a distinction must be made between those activities that are involved in service delivery and are desired to be continued beyond the three years of HCEEP demonstration funding and those activities that are directly related to being a demonstration/model development project, i.e., activities that would not continue after the three years. Separating these activities is an important step in differentiating the true costs of the service program from the other costs involved in being an HCEEP demonstration project.

Third, the breakdown of components and activities must be kept as simple as possible. The more complex the breakdown of activities, the more complex the cost analysis system will have to be. The key here is to develop a breakdown that is detailed enough to provide data to meet the identified cost information needs, but not so complex as to become burdensome.

Bringing together the cost information needs and the program breakdown into a cost analysis system is an interactive process. For instance, it may be necessary to alter the way the program activities are categorized in order to meet specific cost information needs. As a cost analysis system is implemented, additional information may be discovered that could be useful in realizing project goals. Adjustments in the system have to be expected as the project develops and changes.

When established, the cost analysis system should be able to accurately capture three types of program costs: personnel costs, non-personnel costs, and in-kind contributions. The following are some suggested strategies for collecting information on each of these types of costs.

Personnel Costs

Costs related to staff time make up 60 percent to 80 percent of a typical program budget, and, consequently, are the primary focus for any cost analysis system (see examples of cost analysis systems described in other chapters).

When analyzing personnel costs "time is money," because dollars spent on personnel actually purchase staff hours. Thus, an analysis of personnel costs is largely a matter of determining how much time each staff member spends in the various components and activities of the project.

The following are three strategies that may be helpful when determining how a project's staff's time is spent.

Looking Back

Well-established projects can develop fairly accurate time allocations by creating a comprehensive list of past activities and by estimating the amount of time each staff person contributed to the activities. Of course, it is not as simple a job as it may first appear. The strategy relies heavily on task analysis and memory.

One example of the application of the "look back" method would be to estimate staff time spent on child assessments by doing a time/task analysis of a typical child assessment, then multiplying the time spent in the activity by the number of assessments done each month or each year.

Time Logs

Several HCEEP projects are analyzing staff time and costs by maintaining time logs. This strategy also involves developing a list of

program activities. Each staff member records his or her time contribution to the activities. Logs can be maintained continuously, or entries can be made periodically in order to get a sample of time use at different phases of the project's work cycle.

The time-log strategy relies heavily on staff commitment to the process. One way of assuring that commitment is to involve everyone in the development of the comprehensive activity list, the log sheets and the procedures.

Combining Strategies

The third strategy is a combination of looking back and keeping time logs. Project staff conduct an initial time analysis based upon staff experience and then use time logs to look at activities where estimating proves difficult, or to confirm staff estimates.

A common unit of measure, either hours or days, should be used to record each staff member's time. Or, it may be advantageous to convert time into a percent figure in order to see relationships more clearly. For example, it may be more meaningful to say that a staff member spends 10 percent of his or her time in child assessment than it does to say that the person spends 18 hours per month on the task.

To translate time units into dollars, the director should calculate a separate cost rate for each staff member which includes salary, fringe benefits and related overhead costs. (The rates must coincide with the unit of measure for time being used, e.g., hourly rates, daily rates, or use monthly or yearly rates if time is being converted to a percent.) If the exact figures for fringe benefits and overhead costs are not available, a cost rate based on a percert of salaries only will have to be developed.

Non-Personnel Costs

Non-personnel costs means simply those costs that are other than personnel costs paid for directly by the project's budget. They include items such as travel, supplies and equipment, telephone and postage, contractual services, etc. They typically make up from 20 percent to 40 percent of a program's budget.

Some non-personnel costs clearly relate to a particular program component or activity. For example, travel costs incurred by home visitors or equipment purchased for use in the classroom can easily be assigned to the appropriate program component. Other non-personnel costs, such as telephone, postage, and supplies, may relate to several or all program components. They can be assigned by pro-rating them across program components, based on the amount of personnel time given in each component. For example, if 10 percent of staff time is devoted to child assessment, then assign 10 percent to the telephone, postage, and supplies costs to the child assessment component.

Most non-personnel costs are already documented in detail through purchase requisitions, travel reimbursements, and other routine forms and accounting procedures. Such a documentation and accounting system can be used for cost analysis purposes. The key is to establish a way to separate that documentation into the program components and activities of the cost analysis system. This can be done by developing a coding system for the program components and then seeing that each accounting form is coded accurately as it is prepared. It is also helpful to set up a filing system that takes the program component breakdown into account, so that, for example, travel reimbursements can be filed by program component.

In-Kind Contributions

A significant cost factor in many programs are resources provided to the program that the program doesn't pay for out of its own budget. These "in-kind" contributions might include: office and classroom space, utilities, diagnostic services through another agency, and volunteer support. While the project doesn't actually spend dollars for these resources, they should be taken into account when analyzing program costs. At the least, each in-kind resource or service should be identified and described. If possible, the cost of each service, should it have to be purchased, should be determined.

Such information will contribute to showing the true and total costs of the program. Another project might have to purchase those resources or services in order to replicate the program. It can also show community support for the program in a tangible way.

Benefits of Cost Analysis

There are several benefits for the project which prove essential or dictate an ongoing analysis of program costs.

Improvement of Fiscal Efficiency

An ongoing cost analysis system shows when there is a need for budget revisions and simplifies the preparation of new budget revisions and simplifies the preparation of new budgets. It can provide complete and accurate budget reports that can be correlated directly with program activity reports.

Expansion of Understanding of Program Operation, and Contribution to Improved Program Efficiency

The major costs for any HCEEP project are personnel costs, i.e., salaries and salary-related expenses. An analysis of a program's personnel costs shows how program staff actually spend their time. Such a time analysis can lead to improvements in how staff members carry out the work of the project. It can also contribute to the project's ability to communicate staff roles and responsibilities to others.

Contribution to Knowledge of Costs of Service Delivery to Young Handicapped Children

A cost analysis system can generate more accurate figures on direct services costs. Most HCEEP projects would not look very cost efficient if the total number of children served was simply divided into the total amount of federal dollars received. Of course, an HCEEP project does much more than serve its children. It is developing new methods and materials; it is evaluating program effectiveness; it is serving families; and it is disseminating information to the community. But, unless direct service costs can be separated from other development and demonstration costs, someone may simply divide the total costs by the number of children served and say, "Nice, but too expensive."

Allowance of Help to Others in the Financial Dimension of Program Planning

As other sites attempt to replicate all or some of a project's program, one of their immediate needs will be cost information. They will want very specific and detailed information such as: "What equipment should we purchase and what is a good deal?", "What supplies should we order?", "How much money should we set aside for child find and screening activities?" While one program's costs will not necessarily be the same as another's, it is useful to be able to exchange program cost data.

Provision of a Demonstration of Competency that can Reflect on an Entire Program

A project director's ability to speak clearly about the costs of his/her program is extremely useful because it is a subject to which any audience can relate. Cost figures that are authoritative and concrete imply that those qualities are true of the entire program. In other words, they can demonstrate that a program is solid even to audiences that are not sophisticated in early childhood/special education. (The very act of presenting detailed cost data is usually received as an unexpected and appreciated bonus.)

There are also some risks in presenting cost data on a project. Cost data can be easily misunderstood. It can be boring. It can be overemphasized to the point of distracting audiences from the program's activities and accomplishments. Careful planning and integration of cost data into the overall dissemination plans by the director can minimize these risks.

The need for more and better cost information can only increase in the years ahead. Service providers, advocacy groups, and policy makers want and need accurate information on the costs of services for young handicapped children as they consider future program initiatives. HCEEP projects that take the time and effort to capture cost information in a way that can be shared with external audiences as well as their own program staff will contribute significantly to the future of services for young handicapped children.

DATA COLLECTION AND ANALYSIS SYSTEMS: SOME EXAMPLES

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DATA COLLECTION AND ANALYSIS SYSTEMS
SOME EXAMPLES

Introduction

The problem of collecting, analyzing, and presenting cost data has been approached from different points by the four projects described in this section, yet they contain similar elements. Three of the projects, F.I.T. in Nashville, Tennessee, the Early Lifestyle Project in Columbia, Tennessee, and the Macomb 0-3 Regional Project in Macomb, Illinois, routinely use computers for data storage and retrieval (although the systems can be used without instrumentation). The fourth project, the Handicapped Children's Early Education Project in Moscow, Idaho, could easily be adapted for computer use. With the advent of relatively low cost micro-computers, such technological systems are easily available in rural areas without undue expenditure.

The papers represent two of the three levels of cost data collection and analysis described by Gentry in Part I. Level 2, assembling cost data by components, is represented by F.I.T. and the Macomb 0-3 Regional Project. The third level, determining costs by objective is represented by the Early Lifestyle Project and the Handicapped Children's Early Education Project. Examples of the first level, determining total costs expended by budget categories, may be found in another monograph that describes cost effective delivery strategies for early childhood programs operating in rural settings. It will include both program descriptions and cost data.

Each project emphasizes personnel costs, as well as factors related to time and activities. All reflect the need to capture time with some form of log. Since the four projects also use a form of ongoing data collection they have no need to use the "looking back" strategy identified by Black.

The systems used by three of the projects are also able to reflect some non-personnel costs. F.I.T., the Handicapped Children's Early Education Project, and the Macomb 0-3 Regional Project provide for travel cost in their systems. The Idaho Project also is able to provide costs for materials, but the other three do not directly reflect expenditures for supplies.

The Early Lifestyle Project system is the only one that is designed to provide ongoing data about the current status of an objective. The others provide summative data regarding task accomplishment.

The systems used by the four projects can be used to divide costs in order to differentiate between costs related to model development and those related to service delivery. Such discrimination provides more accurate data about actual costs per child than can be obtained when the two kinds of costs are combined.

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All four projects describe the benefits of keeping and analyzing cost data, as noted by both Gentry and Black in Part I. The F.I.T. Project noted that since their goal was local continuation of services after termination of federal funds, they needed information about time, activities, and cost in order to inform potential funding sources. The F.I.T. Project also uses their system as a management tool, as do the other projects. The Early Lifestyle Project indicates that the functional cost analysis not only simplifies the preparation of new budgets, but also keeps staff on task. The Macomb 0-3 Regional Project uses their system to determine job descriptions and to provide a comprehensive view of the project's operation. The Handicapped Children's Early Education Project finds cost information useful for decision making related to program activities as well as for a basis for future planning. Additionally, the act of maintaining the necessary records leads to greater staff attention of accountability and task accomplishment.

It seems important to point out that whether implicitly or explicitly stated, all four projects had a clear picture of their basic reasons for collecting cost information, and included such justification in their planning. Use of such systems as reported here requires a degree of flexibility since the systems tend to be in constant evolution. Because of changes in programming focus, reflected in system changes, projects carry on continuous evaluation leading to decisions regarding the effectiveness of program components for both internal and external audiences.

Finally, cost information generated by the systems discussed in the following papers may easily be adopted by projects serving young handicapped children for use in meeting the unique demands placed on special education programs. Political and economic events which have occurred since January, 1981, including slated legislative action related to block grants to the states, require that cost information be available for use in defending programs for handicapped children.

PERSONNEL ALLOCATION COSTS

IN A RURAL EARLY EDUCATION CLINIC

Judith A. Davis, Vaughan Stagg, Harris Gabel

Project Description

The overarching aim of the Family, Infant and Toddler (FIT) Project* is to enhance the development of young mentally retarded children in predominately rural areas by providing a family-implemented educational program. The approach is based on assumptions that rural communities contain major resources that can be mobilized to benefit mentally retarded children and their families.

The project capitalizes primarily on two types of resources: 1) families, including nuclear and extended families, and 2) professionals whose responsibility includes providing services for young mentally retarded children, but whose training or experience is insufficient for the task. These persons have been identified as local allied professionals.

One goal of the project is to develop a replicable service delivery model for the target population. The model provides for establishing educational clinics in rural communities. The project operates from a central base at George Peabody College for Teachers of Vanderbilt University in Nashville, Tennessee. Project staff travel to rural areas and meet with small groups of children and families at suitable locations in their own communities in order to provide programming for the children and for nuclear and extended family members. These clinics serve as vehicles for enhancing the family as a resource for the education of young retarded children.

A second project goal is to develop a replicable inservice training program for local allied professionals. These professionals, from the fields of mental retardation, psychology, public health, early education, and others, are trained so that they may be better able to serve the educational needs of the young retarded children and their families. Training

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*The Family, Infant and Toddler Project is a component of the John F. Kennedy Center for Research on Education and Human Development, George Peabody College for Teachers of Vanderbilt University, Nashville, Tennessee. This work was developed with funds provided by a grant from the Office of Special Education, Department of Education (Grant No. G007802932) with matching funds provided by the Tennessee Department of Mental Health and Mental Retardation. The content of this paper does not reflect the position or policy of the U.S. Department of Education, and no official endorsement of this paper should be inferred.

of the local allied professionals takes place coordinate with the delivery of services through the model service delivery component.

Lastly, the project is directed at increasing the overall level of educational services of young retarded children in the rural areas served. The entire project is closely coordinated with state and local agencies with the aim of ensuring the continuation of the program in each rural community after the termination of federal funding.

Need for Time/Activity Analysis

The goal of the FIT Project is the local continuation of project services in rural communities after the termination of federal funds. This goal necessitated the analysis of staff time, activities, and cost in order to inform each community what to anticipate in operating a preschool intervention program. In order to give a time and cost analysis to the local communities, the project undertook the development of a comprehensive system designed to ascertain resources within the project staff and how staff spend their time. In addition to specification of time and cost per activities (i.e., model development, service delivery, planning, dissemination, record keeping, staff meetings, and so forth), this system enables the staff to determine the amount of time for serving particular children and families, as well as the types of activities needed to provide services. In addition to cost and time analysis, this system was available for use as a management tool in monitoring how project staff used their time and what changes might be needed for most effective and efficient use of time.

For purpose of illustration, a general breakdown of only personnel time and costs using this monitoring system is represented in this paper. It is possible with this system to generate a more detailed description of the allocation of staff time across 61 project activities. However, in this paper we have collapsed several categories. Indirect charges, and administrative and material costs are not represented in this paper.

Description of Monitoring System

The FIT Project, during the second half of the first year of operation, designed and implemented a system of monitoring staff allocations of time and activities. The intent of this monitoring system was to provide an easily accessible record of staff members' daily activities. The monitoring system was conceptualized as nine major domains including 1) general activities, 2) educational/clinic operations, 3) allied professional training, 4) inservice, 5) site selection, 6) coordination with other agencies, 7) coordination/site maintenance, 8) evaluation, and 9) administration. These major domains reflect overall project activities.

A total of 61 specific activities were designated and coded with numbers 01-61. A manual defining the specific activities was developed by the program evaluator. Examples of general activities include staff meetings, technical assistance and consultation with other agencies, general record keeping, dissemination activities, and informal staff meetings. Education/clinic operations include activities such as child and family programs model development, direct services, planning, communications with

families, travel time, liaison with other agencies serving child and family, home visits, child screening and child evaluation. Allied professional training activities include model development, planning and conducting seminars, travel, supervision and the like. Inservice, site selection, coordination and evaluation domains include activities such as planning, model development, conferences and community meetings, communications, travel related to the domain, data analysis, and training. Administrative activities include budget, personnel recruitment, office management, report writing for funding agencies, and like activities.

In addition to activity codes, codes were designated for each staff member, each community participating with the project, and each child and family served by the project. Concurrently, a FIT activity sheet was designed so that information could be recorded, (See Table 1.)

Table 1: FIT Activity Sheet

Amount of Time	Child	Project Activity	Site	Staff Member	Date
.4	0 0	3 1	0 3	0 4	3/27
1.0	1 7	2 3	0 2	0 4	3/27

Time was delineated in tenths of an hour. Thus, six minutes equalled .1, 12 minutes equalled .2, and so on. With this recording system, the project was able to encode the information directly for computer analysis. A program was designed to construct contingency tables reflecting the amount of time spent on various activities, using any two combinations of the following variables: staff member, child, activity, and site. Thus, the allocation of staff time could be determined for each child, each site, each activity, or any other combination of variables.

Time and Cost Analysis

Table 2 and Table 3 are breakdowns of monthly activities for two staff members, the infant/family trainer and the training coordinator. This information was collected during the middle of the first year of operation, February through May of 1979. General activities for both tables include regularly scheduled staff meetings, record keeping, dissemination activities, technical assistance and consultation with other agencies, informal staff conferences and miscellaneous activities.

Table 2 depicts a breakdown of time per activities for a full-time infant/family trainer. The table gives calculations for a monthly percentage of time per activity, the average time spent in hours, and the cost. These figures were derived as using a 37.5 hour work week with four weeks comprising the monthly total. The annual base salary used was $10,000 or $875 per month.

Though the project has a capacity to determine costs by child, specific activity and community served, the figures here represent a more general breakdown of costs for serving two communities and 10 children per month.

Direct service includes direct teaching of child, and child and parent, leading parent groups, family communications, child referral, screening and evaluation activities, home visiting, agency liaison and travel to and from clinics.

Table 2. Infant/Family Trainer Monthly Allocations

Activities	% of Time	Average No. of Hours	Cost
Clinic Services			
Model Development	5.32	7.99	$ 46.38
Planning	27.04	40.14	$234.02
Direct Services	28.52	42.83	$249.70
General	23.84	35.81	$208.77
Inservice	9.46	14.22	$ 82.90
Other	5.78	8.69	$ 50.66

Table 3 is a breakdown of cost and activities per month for training coordinator. This position is a part-time position at 60% time, 24 hours per week. Figures used for calculations were on annual base salary of $7,200, $600 per month. Direct services include travel to rural communities, conducting seminars for training local professionals, and practicum supervision of professionals and staff.

Table 3: Training Coordinator Monthly Allocations

Activities	% of Time	Average No. of Hours	Cost
General	33.35	29.79	$186.19
Training Program			
Model Development	13.24	11.83	$ 73.94
Planning	15.83	14.17	$ 88.56
Direct Service	26.69	23.86	$149.13
Inservice	4.5	4.08	$ 25.50
Other	6.7	5.99	$ 37.44

The monitoring system presented in this paper has served well to describe the expenditure of staff time in the FIT Project. The data presented here represent only one way the monitoring system can be employed and one way staff cost breakdowns can be generated. Other systems may be better suited to different projects and needs. However, we have found this monitoring system to be a flexible tool with multiple uses. More detailed information and a manual of definitions of this monitoring system can be obtained from the authors. For further information, contact Harris Gabel.

COMPUTERIZED MANAGEMENT SYSTEMS - AN APPROACH TO ANALYSIS OF PERSONNEL COSTS

Pamela J. Frakes

The Early Lifestyle Program (ELP) at the King's Daughters' School in Columbia, Tennessee provides services to moderately to severely retarded children from birth to eight years of age, living in rural areas, as well as concerning itself with dissemination and coordination strategies for service delivery. The program, serving a total of twenty-eight children at this time, is composed of two preschool classes and a home-based infant education component. Individual training and small group instructional activities are major components of the children's program, while parent training and mobilization of community resources are also objectives of the project. Learning is the basis of child progress evaluation, as opposed to performance being the criteria for measurement. For evaluation and record-keeping purposes, the Early Lifestyle Program utilizes a computerized management system, a multi-purpose tool which provides for on-going formative project evaluation, as well as capturing data for use in summative evaluation tasks.

Systems Approach to Project Management

The purpose of using the systems approach is to monitor progress and time expenditures as the project activities are completed. It is used by the staff when involved in projects in which the completion of specific activities is designed to reach certain objectives. A team of professionals can sometimes, because of concentration and involvement in a serious study, forget that certain activities have to be performed in order for others to be undertaken. They also neglect to note that sometimes the activity next on the agenda cannot be accomplished until the results of the preceding activities are known.

In other words, competent educators or researchers are not always the best project managers. To manage the many parts of the workscope (reporting responsibilities, meetings, form completion, approval requirements, and other activities), it is possible, using a computerized management system, to receive periodic reminders and summaries of activities for each objective. Capturing time spent on project activities also aids in future program planning tasks. The system is designed to consume minimal record keeping time and is used monthly.

For summative evaluation purposes, the system allows staff to easily

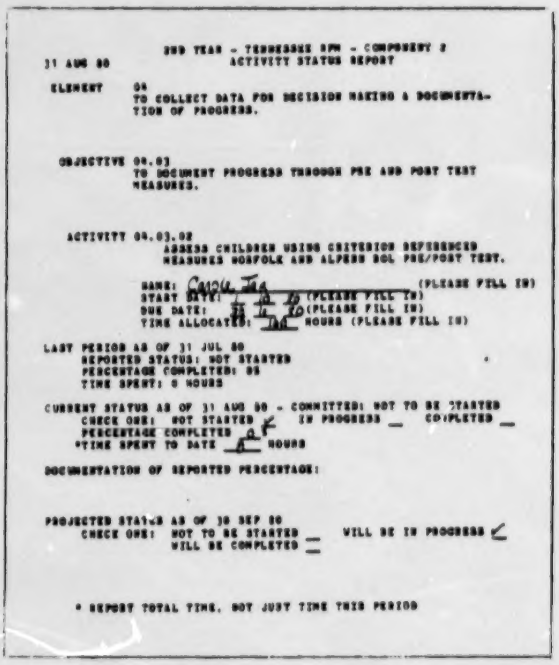
determine whether or not project goals and objectives were met. It also enables staff to summarize and analyze time spent for cost analysis purposes. The system is set up on an annual basis and is divided into program components: Administration and Management; Services to Children; Services for Parents; Staff Development; and Demonstration, Dissemination and Continuation. Objectives to be accomplished and implementation activities are specified for each component.

A team approach is used to initiate the management system. The team is the project staff and they decide who will do what by when. A clerical staff member records all decisions. When projected tasks have been spelled out, assignments taken or given, and dates set for completion, the plans are entered into a computer program for generating a "turn-around document."

Figure 1, Activity Status Report, shows a sample of this document. The component is specified at the top of the page. All activities in this component involve Services to Children. The element and objectives are given. The activity is then printed with the specifics of who, when, and how much time will be spent in completing the activity.

Then three conditional statements are listed: status as of last period, current status, and future or projected status. The document has the Last Period status filled out by the computer system.

Figure 1. Activity Status Report



```
                    2ND YEAR - TENNESSEE RPM - COMPONENT 2
31 AUG 80                   ACTIVITY STATUS REPORT

ELEMENT     04
            TO COLLECT DATA FOR DECISION MAKING & DOCUMENTA-
            TION OF PROGRESS.


 OBJECTIVE 04.03
            TO DOCUMENT PROGRESS THROUGH PRE AND POST TEST
            MEASURES.


  ACTIVITY 04.03.02
               ASSESS CHILDREN USING CRITERION REFERENCED
               MEASURES NORFOLK AND ALPERN DOL PRE/POST TEST.

               NAME: Carol Jay                    (PLEASE FILL IN)
               START DATE: 31 Jul 80 (PLEASE FILL IN)
               DUE DATE:   31 Jul 80 (PLEASE FILL IN)
               TIME ALLOCATED: 24 HOURS (PLEASE FILL IN)

LAST PERIOD AS OF 31 JUL 80
     REPORTED STATUS: NOT STARTED
     PERCENTAGE COMPLETED: 00
     TIME SPENT: 0 HOURS

CURRENT STATUS AS OF 31 AUG 80 - COMMITTED: NOT TO BE STARTED
     CHECK ONE:  NOT STARTED ✓   IN PROGRESS _   COMPLETED _
     PERCENTAGE COMPLETED 0 ✓
    *TIME SPENT TO DATE 0 HOURS

DOCUMENTATION OF REPORTED PERCENTAGE:


PROJECTED STATUS AS OF 30 SEP 80
     CHECK ONE:  NOT TO BE STARTED _    WILL BE IN PROGRESS ✓
                 WILL BE COMPLETED _


     * REPORT TOTAL TIME, NOT JUST TIME THIS PERIOD
```

A unique feature of a computerized system is that changes can be made easily. Dates, time to be spent, changed wording and even complete activity changes are possible. At the annual reporting period, these changes may be summarized to evaluate planning effectiveness.

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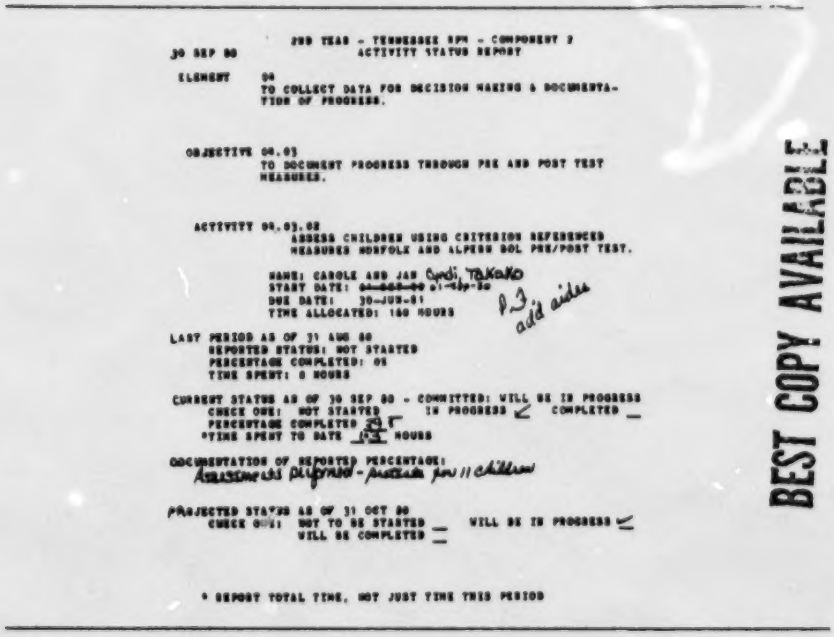
Many steps will then be taken by staff to accomplish the objectives for the project's total operation. Some of these steps will occur simultaneously, while others may be sequential. This monthly report will allow a "tickler" to occur for each team member to improve overall operation and management.

Figure 2 is an example of a completed Activity Status Report. The report shows what was returned to the operator from the last reporting period and what was written by the operator. The report lists all objectives and activity details, thus the operator is reminded of the work commitment.

Figure 2. Completed Activity Status Report



2ND YEAR - TENNESSEE RPN - COMPONENT 2
30 SEP 80 ACTIVITY STATUS REPORT

ELEMENT 04
TO COLLECT DATA FOR DECISION MAKING & DOCUMENTATION OF PROGRESS.

OBJECTIVE 04.03
TO DOCUMENT PROGRESS THROUGH PRE AND POST TEST MEASURES.

ACTIVITY 04.03.02
ASSESS CHILDREN USING CRITERION REFERENCED MEASURES NORFOLK AND ALPHEN BOL PRE/POST TEST.

NAME: CAROLE AND JAN Cindi TOKOKO
START DATE: 04-OCT-80 01-Sep-80
DUE DATE: 30-JUN-81
TIME ALLOCATED: 160 HOURS P.J. aid aides

LAST PERIOD AS OF 31 AUG 80
REPORTED STATUS: NOT STARTED
PERCENTAGE COMPLETED: 0%
TIME SPENT: 0 HOURS

CURRENT STATUS AS OF 30 SEP 80 - COMMITTED: WILL BE IN PROGRESS
CHECK ONE: NOT STARTED _ IN PROGRESS ✓ COMPLETED _
PERCENTAGE COMPLETED 25%
*TIME SPENT TO DATE 120 HOURS

DOCUMENTATION OF REPORTED PERCENTAGE:
Assessed 13 children - Pretest for 11 children

PROJECTED STATUS AS OF 31 OCT 80
CHECK ONE: NOT TO BE STARTED _ WILL BE IN PROGRESS ✓
WILL BE COMPLETED _

* REPORT TOTAL TIME, NOT JUST TIME THIS PERIOD

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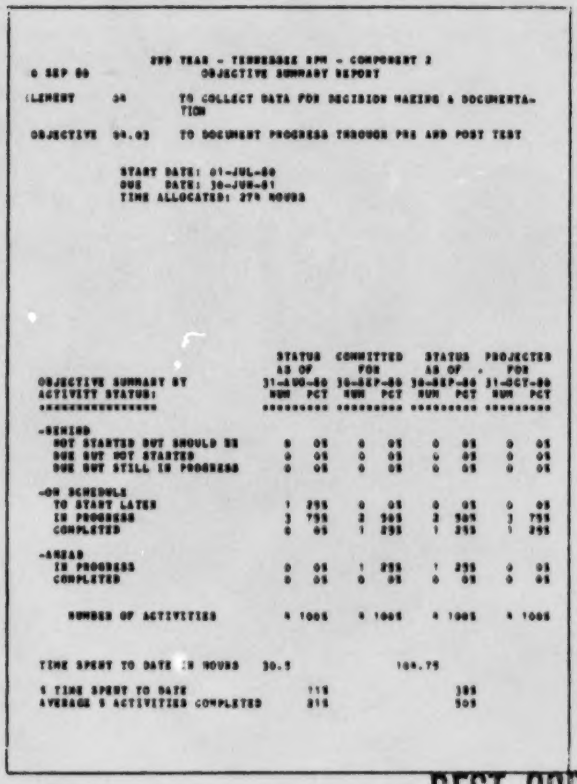
Summarizing Data from the Management System

The Activity Status Reports are summarized by objectives and elements as shown in Figures 3 and 4. The project manager receives these reports monthly. The three summary status conditions are given as behind schedule, on schedule, and ahead of schedule. To the right of each summarized category are the number and percentage of items as of the last reporting period, then the committed work for the current period and then the actual work accomplishments. The last column shows the future plan. The totals for the summary are found at the bottom of the page.

Figure 3. Objective Summary Report



2ND YEAR - TENNESSEE EPM - COMPONENT 2
OBJECTIVE SUMMARY REPORT

0 SEP 86

ELEMENT 04 TO COLLECT DATA FOR DECISION MAKING & DOCUMENTATION

OBJECTIVE 04.03 TO DOCUMENT PROGRESS THROUGH PRE AND POST TEST

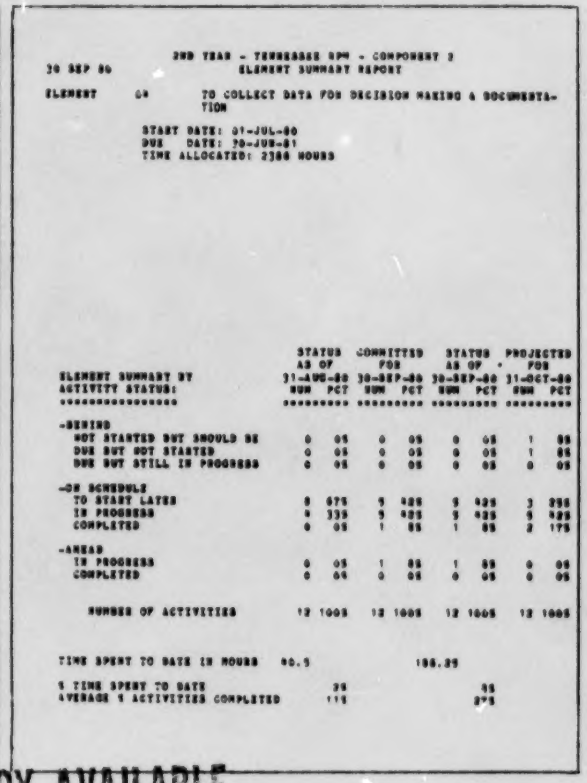
START DATE: 01-JUL-86
DUE DATE: 30-JUN-87
TIME ALLOCATED: 270 HOURS

OBJECTIVE SUMMARY BY ACTIVITY STATUS:	STATUS AS OF 31-AUG-86 NUM	PCT	COMMITTED FOR 30-SEP-86 NUM	PCT	STATUS AS OF 30-SEP-86 NUM	PCT	PROJECTED FOR 31-OCT-86 NUM	PCT
-BEHIND								
NOT STARTED BUT SHOULD BE	0	0%	0	0%	0	0%	0	0%
DUE BUT NOT STARTED	0	0%	0	0%	0	0%	0	0%
DUE BUT STILL IN PROGRESS	0	0%	0	0%	0	0%	0	0%
-ON SCHEDULE								
TO START LATER	1	25%	0	0%	0	0%	0	0%
IN PROGRESS	3	75%	3	50%	3	50%	3	75%
COMPLETED	0	0%	1	25%	1	25%	1	25%
-AHEAD								
IN PROGRESS	0	0%	1	25%	1	25%	0	0%
COMPLETED	0	0%	0	0%	0	0%	0	0%
NUMBER OF ACTIVITIES	4	100%	4	100%	4	100%	4	100%

TIME SPENT TO DATE IN HOURS 30.5 104.75

% TIME SPENT TO DATE 11% 38%
AVERAGE % ACTIVITIES COMPLETED 31% 50%

Figure 4. Element Summary Report



2ND YEAR - TENNESSEE EPM - COMPONENT 2
ELEMENT SUMMARY REPORT

30 SEP 86

ELEMENT 04 TO COLLECT DATA FOR DECISION MAKING & DOCUMENTATION

START DATE: 01-JUL-86
DUE DATE: 30-JUN-87
TIME ALLOCATED: 2388 HOURS

ELEMENT SUMMARY BY ACTIVITY STATUS:	STATUS AS OF 31-AUG-86 NUM	PCT	COMMITTED FOR 30-SEP-86 NUM	PCT	STATUS AS OF 30-SEP-86 NUM	PCT	PROJECTED FOR 31-OCT-86 NUM	PCT
-BEHIND								
NOT STARTED BUT SHOULD BE	0	0%	0	0%	0	0%	1	8%
DUE BUT NOT STARTED	0	0%	0	0%	0	0%	1	8%
DUE BUT STILL IN PROGRESS	0	0%	0	0%	0	0%	0	0%
-ON SCHEDULE								
TO START LATER	8	67%	5	42%	5	42%	3	25%
IN PROGRESS	4	33%	5	42%	5	42%	5	42%
COMPLETED	0	0%	1	8%	1	8%	2	17%
-AHEAD								
IN PROGRESS	0	0%	1	8%	1	8%	0	0%
COMPLETED	0	0%	0	0%	0	0%	0	0%
NUMBER OF ACTIVITIES	12	100%	12	100%	12	100%	12	100%

TIME SPENT TO DATE IN HOURS 90.5 186.25

% TIME SPENT TO DATE 3% 8%
AVERAGE % ACTIVITIES COMPLETED 11% 27%

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Those activities that are behind or whose status is unchanged from the previous reporting period are summarized for each component. This alerts the project manager to investigate causes of delay.

The ongoing analysis of personnel time requires the commitment of the entire project staff and certain time expenditures for implementation. However, the benefits more than pay for the effort in terms of increased project efficiency and productivity.

Data Collection for Project Review and Cost Analysis

Time recorded on the Activity Status Reports is retrieved from daily time logs maintained by each staff member (Figure 5). Individual time logs reflect each person's assigned activities, and space for other activities to be added if needed. Logs are reviewed weekly and summarized monthly to determine personnel costs.

Figure 5. Daily Activity Log

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DAILY ACTIVITY LOG

NAME: B. Hicks POSITION: SPEECH THERAPIST DATE: Week of Sept. 8-12

HOURS	ACTIVITY	DOCUMENTATION	M	Tu	W	Th	F	TOTAL TO DATE*
	COMPONENT II: SERVICES TO CHILDREN							
02.01.01	Administer the test to participating children	Partial assessments administered to eight children.		1.25hrs.		1hrs	.5hrs	2.5 hrs.
03.01.02	Summarize the assessment results and verify the child's needs for special services within 30 days	Test: scored, recorded, and summarized		2.5 hrs.	2.35 hrs.		1 hrs.	2.85 hrs.
03.02.02	Prepare program plan according to State Dept. of Education Guidelines and ESN Procedures	Present level and goal statements prepared					2 hrs.	2 hrs.
03.03.01	Prioritize needs and develop sequenced objectives for program plan.							
03.03.02	Meet periodically as decided by parents and staff or as needs arise to review child's progress and adjust objectives for the child and family.							
03.04.01	Specify curriculum materials and methods of instruction to be carried out in the classroom and home training.	Therapy schedule and instructional plans prepared.	1.5 hrs.				.75 hrs.	2.25 hrs.
05.01.01	Provide speech therapy as outlined in each child's IEP and goal sheets	Articulation therapy for three children	.75 hrs.					0.75 hrs.

* To be filled in by office staff.

SIGNATURE: _____ DATE: _____

Individual activities are categorized in terms of demonstration activities, direct services and frequency of occurrence (Figure 6). Demonstration tasks are generally considered to be those that will not continue after the HCEEP funding period and may include, but not be limited to: conceptualization or initial planning tasks, product development, some evaluation and dissemination tasks. Direct services are, therefore, those that are anticipated to continue after the demonstration funding period. Frequency of occurrence is determined by the nature of the activity and whether it is a one time, periodic or ongoing event.

Figure 6. Component Summary by Frequency

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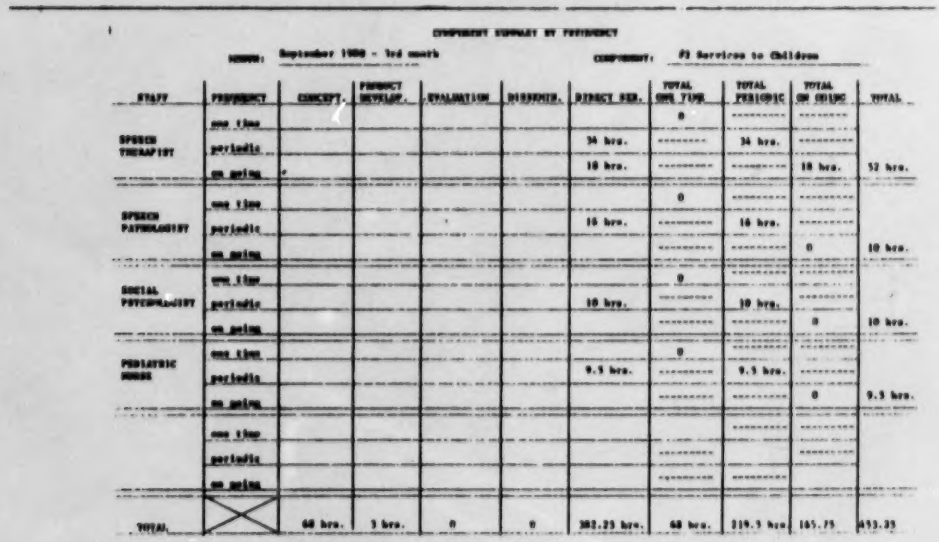
COMPONENT SUMMARY BY FREQUENCY

MONTH: September,1980 - 3rd month COMPONENT: #2 Services to Children

STAFF	FREQUENCY	CONCEPT.	PRODUCT DEVELOP.	EVALUATION	DISSEMIN.	DIRECT SER.	TOTAL ONE TIME	TOTAL PERIODIC	TOTAL ON GOING	TOTAL
PROJECT COORDINATOR	one time	37 hrs.					37 hrs.			
	periodic		3 hrs.			3 hrs.		8 hrs.		
	on going					17 hrs.			17 hrs.	60 hrs.
SPEECH TRAINER	one time	26 hrs.					26 hrs.			
	periodic					16 hrs.		16 hrs.		
	on going					12.25 hrs.			12.25 hrs.	54.25 hrs
CLASSROOM TEACHERS (3)	one time	3 hrs.					3 hrs.			
	periodic					79 hrs.		79 hrs.		
	on going					72 hrs.			72 hrs.	156 hrs.
CLASSROOM AIDES (2)	one time						0			
	periodic					51 hrs.		51 hrs.		
	on going					44.5 hrs.			44.5 hrs.	95.5 hrs.
	one time									
	periodic									
	on going									
TOTAL		XXX	SEE SPECIAL PAGE FOR TOTALS							

Figure 6. Component Summary by Frequency (Continued)



COMPONENT SUMMARY BY FREQUENCY

MONTH: September 1980 - 1st month COMPONENT: #3 Services to Children

STAFF	FREQUENCY	CONCEPT.	PRODUCT DEVELOP.	EVALUATION	DISSEMIN.	DIRECT SER.	TOTAL ONE TIME	TOTAL PERIODIC	TOTAL ON GOING	TOTAL
SPEECH THERAPIST	one time						0			
	periodic					34 hrs.		34 hrs.		
	on going					18 hrs.			18 hrs.	52 hrs.
SPEECH PATHOLOGIST	one time						0			
	periodic					16 hrs.		16 hrs.		
	on going								0	16 hrs.
SOCIAL PSYCHOLOGIST	one time						0			
	periodic					10 hrs.		10 hrs.		
	on going								0	10 hrs.
PEDIATRIC NURSE	one time						0			
	periodic					9.5 hrs.		9.5 hrs.		
	on going								0	9.5 hrs.
	one time									
	periodic									
	on going									
TOTAL		68 hrs.	3 hrs.	0	0	302.25 hrs.	68 hrs.	219.5 hrs	165.75	453.25

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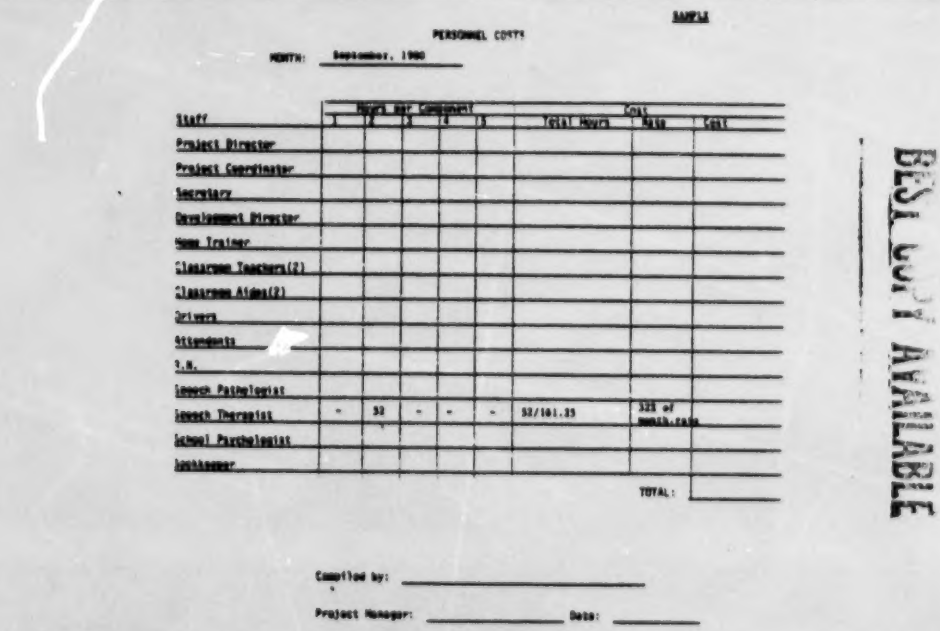
Time spent is translated into money. A separate cost rate for each staff member is calculated which may be either based on an hourly rate or converted to a percentage of a monthly rate (Figure 7).

Figure 7. Personnel Costs



SAMPLE

PERSONNEL COSTS

MONTH: September, 1980

Staff	Hours per Component 1	2	3	4	5	Total Hours	Cost Rate	Cost
Project Director								
Project Coordinator								
Secretary								
Development Director								
Home Trainer								
Classroom Teachers(2)								
Classroom Aides(2)								
Drivers								
Attendants								
L.H.								
Speech Pathologist								
Speech Therapist	-	32	-	-	-	52/101.25	32% of month rate	
School Psychologist								
Bookkeeper								
							TOTAL:	

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Compiled by: _____

Project Manager: _____ Date: _____

Once completed, the project manager can easily retrieve information regarding the costs:

1) of individual project components
2) of product development time
3) of ideas resulting from planning and conceptualization tasks
4) of practices and specific types of direct service
5) per child
6) of specific types of demonstration/dissemination activities.

A functional cost analysis system can greatly improve a project's fiscal efficiency. The capture of actual personnel costs demonstrates and justifies the need for budget revision. It also simplifies the preparation of new budgets. Ongoing time analysis influences the way in which staff members carry out their work. It tends to keep staff on task thus increasing productivity. Time and cost analysis enable projects to more accurately communicate staff roles and responsibilities to others and to assist others in the pursuit of similar programs.

A COST ANALYSIS APPROACH USED BY THE UNIVERSITY OF IDAHO HANDICAPPED CHILDREN'S EARLY EDUCATION PROGRAM

Dale Gentry

The handicapped children's early education project provides educational intervention for handicapped children from birth to school age who reside in Moscow, Idaho and in surrounding areas of Latah County. Three-to-five year old children are served in an integrated center-based classroom that provides for parent involvement through parent groups and individualized parent training and participation in their child's program. Birth-to-three year old children are provided intervention through home and center-based programs in which the parents serve as their child's teacher.

The early education program is based on several assumptions that are incorporated into the service delivery model:

- -parent involvement is essential for maximal child progress
- -handicapped children should be served with normal children to the greatest extent possible
- -children should receive individually designed and delivered instruction
- -curriculum should be functional and comprehensive, and include all developmental domains important to young children
- -support personnel should work through teachers and parents when possible

The instructional model, itself, consists of a direct and systematic instruction approach that includes:

- -specification of curriculum domains and sequenced tasks
- -child assessment in relation to curricular content
- -formulation of individual child objectives that include mastery criteria
- -individual instructional plans that include a description of instructional materials, teaching procedures, child responses, feedback, reinforcements, and correction procedures
- -daily measurement of child progress, and use of the data in making instructional decisions
- -periodic summative evaluation of child gains

System Description

Cost data have been collected on a variety of project activities as part of an objectives oriented project management system. The management system requires the specification of goals, objectives, enabling activities, desired outcomes or products, required resources, timelines for completion, and personnel who are to be assigned responsibility for a given objective or activity. The project elements are determined by the director and the project manager. A summary of the system is shown in Figure 1.

Figure 1. Sequential Procedures for Use of the Objectives Oriented Management System

Procedures	Persons Responsible
Identify Goals	
Specify two or more specific objectives for each goal	Project Director
Specify chronological enabling activities	and
Designate the following 1. anticipated outcome or product 2. scheduled due date 3. person responsible	Project Manager
Compile elements into a series of planning sheets	Project Manager
Transfer to assignment cards (report cards)	
File by assignment, then organize by due dates	Secretary
Give copy to responsible staff member	Project Manager
Record data on report assignment cards (single activities)	
Record data on time logs (recurring events)	Appropriate staff person
When activity is complete, submit report card	
Submit time logs (monthly)	
Summarize information on Cost Record Forms	Project Manager

To illustrate the system, examples will be provided from the early education project. Some of the major goals of the project (from a group of 11) include:

1. To assure that preschool children between birth and five years of age who are handicapped or high risk for handicapping conditions are identified and receive appropriate diagnostic and assessment services.
2. To assure comprehensive, continuous service delivery to all children between birth and five years of age, until they are enrolled in public school programs.
3. To assure parent and family involvement in providing educational intervention to their handicapped preschool child.
4. To assure coordination with different agencies and services to maximize the benefit to enrolled children.

5. To train all personnel, including parents, in knowledge and competencies related to the progress and development of the handicapped child.
6. To develop and document information and procedures so they are disseminable and replicable.
7. To provide a program evaluation that assesses individual child progress through direct measurement, evaluates parent change, assesses overall progress of enrolled children, and evaluates implementation of project objectives and activities.

Each goal was detailed into two or more specific objectives. For example, for the goal of assuring continuous service delivery (Goal 2), the objectives included:

1. To arrange for placement of all identified children in ongoing intervention programs.
2. To utilize a direct intervention model in providing services to enrolled children.
3. To assure parent and family involvement in providing educational intervention to their handicapped child.

At any specific time, the management system may contain from 20 to 30 objectives.

Each objective was further divided into a series of chronological enabling activities. For example, for Objective 2 above, some of the enabling activities include:

1. Review and select assessment instruments.
2. Conduct assessments of each child and establish program goals.
3. Review and select appropriate curriculum for each program goal identified.
4. Formulate long range and immediate intervention objectives.
5. Plan an intervention program for each immediate objective.
6. Formulate an ongoing measurement plan for each instructional objective.
7. Implement intervention and measurement programs.
8. Conduct outcome evaluations.

For each enabling activity several additional related elements were specified, including the anticipated outcome or product, the scheduled due date, and the staff person responsible for the activity.

A numbering system identifies goals as well as the objectives, enabling activities and other relevant information associated with that goal (i.e., 2.2.1). In the example above, the first numberal 2 identifies the second goal, the next 2 identifies the second objective for goal 2, while 1 identifies the first enabling activity for the second objective. Sometimes in normal operation, accomplishment of activities that do not fit any of the

categories is necessary. Although these may not fit into the numbering system, they are named (not numbered) and entered into the system.

All project components/elements are compiled onto a series of planning sheets by the project manager. An example of the project planning format is shown in Figure 2.

Figure 2. Project Planning Sheet

Goal No. 3.0 : To assure comprehensive, continuous service delivery to all identified children between birth and school age.

OBJECTIVE	ENABLING ACTIVITY	PRODUCT/OUTCOME	REQUIRED RESOURCES	START/STOP DATES	RESPONSIBILITY
3.1 To arrange for placement of all identified children in suitable, ongoing intervention programs	3.1.1 Determine most appropriate intervention setting (home- or center-based)	3.1.1 Child placement decision made	3.1.1 Staff time for meeting Direct service and support personnel Necessary assessment instruments and materials	3.1.1 Begin immediately. Stop within 15 days of becoming eligible for inclusion	3.1.1 Project manager Home interventionist
	3.1.2 Schedule day/time time of intervention program including beginning date, time, location, and duration	3.1.2 Child scheduled in program	3.1.2 Time direct source and support necessary diagnostics	3.1.1 Begin immediately. Stop within 15 days of becoming eligible for inclusion	3.1.1 Project manager Home interventionist
	3.1.3 Assist in planning and delivery of transportation when needed	3.1.3 Transportation arranged	3.1.3 Vehicle, staff, time (gas, oil)	3.1.3 As needed to coincide with service delivery date	3.1.3 Project manager Home interventionist

Once project activities are determined, information is transferred by the secretarial staff to cards that can be used by both the project manager and the staff person responsible for the activity. The manager places the cards in a file, organized by assignment and due dates, and provides the appropriate staff member with a copy of the assignment date indicated. A copy of the assignment card is shown in Figure 3.

Figure 3. Activity Assignment and Report Card

ASSIGN ON: Month October / Day 1 / Year 1979

REVIEW ON: Month November / Day 30 / Year 1979

Goal No. 6.00 To develop and document information

Objective No. 6.1 To develop an explanation of project philosophy

ELEMENT	PLAN	REPORT
ACTIVITY	Draft content, design brochures, layout	O.K.
PRODUCT/OUTCOME	Complete brochure	
RESPONSIBILITY	Project Manager	
DUE DATE	December 20, 1979	
TIME ESTIMATE	16 hours	12 hours
REQUIRED RESOURCES	Graphic artist Print shop	

Report By J. Smith Date December 22, 1979

Note that the system actually makes use of two kinds of recording devices. The assignment card is used for single activities which are expected to be accomplished in a short period of time (for example, the development of a brochure) while the time log is used for recurring activities such as home visits for particular children.

The column titled "report" on the Activity Assignment and Report Card is most frequently used to record exceptions to expectations. The brochure project, used as an example, took only 12 hours of staff time compared to the projected 16 hours.

All staff members are given weekly time logs (see Figure 4) on which they record the number of the activity and the amount of time spent. They record their achievements and other relevant information on the card and/or the time log (whichever is appropriate). When a given activity is complete, the staff member submits the report to the project manager on the assignment card, accompanied by a copy of the product, where appropriate. In the case of recurring activities, the staff member submits a copy of the time log.

Figure 4. Weekly Time Log

WEEKLY TIME LOG

EDUCATIONAL SERVICES FOR HANDICAPPED INFANTS AND CHILDREN

Name: J. Olson Week Ending: February 18, 1981

Date	Time Start	Time Stop	Total	Event #	PRODUCT
2/9	8:00	9:00	1 hr	7.4.1	Review intake and diagnostic information with staff
2/9	9:10	9:40	½ hr	2.3.1	Preparation for home visit to Jone's family
2/9	9:45	10:00	¼ hr	2.3.9	Travel to Jones home
2/9	10:00	11:15	1-¼ hr	2.3.4	Home visit - Jones child and mother
2/9	11:15	11:30	¼ hr	2.3.9	Travel to office
2/9	11:30	12:00	½ hr	6.4.2	Answer letters about project
2/9	1:00	2:45	1-3/4hr	3.2.1	Plan materials for parent meeting
2/9	3:00		hr	7.9.2	Re cord keeping
2/9					

Assignment cards are turned in when an activity is completed. Time logs are collected monthly except in the case of new staff members. In order to insure that a new person is using the time log correctly, logs are collected weekly for the first two months the person is on the job.

The forms used have undergone a number of changes since the system was started. For example, the column labeled "required resources" was added to the Project Planning Sheet. The original form contained a column titled "scheduled completion," but this was changed to "start/stop dates" on the form shown in Figure 2. The system tends to be in constant evolution, enabling it to be tailored for specific situations.

The project manager summarizes the collected information on a form such as the one shown in Figure 5.

Figure 5. Cost Record Form

Activity # 6.1	COST RECORD	Scheduled Due Date 12/ 20 / 79

Submitted by: J. Smith

Date submitted by: 12/22/79

Time spent: 12 hours @ 7/76

93.12

Equipment/materials	COST
Graphic artist time (4 hours)	$ 60.00
Printing (includes paper, ink, plates)	$ 215.00
	$
	$
(List remaining materials on back) TOTAL	$ 368.12

COMMENTS:

First printing, 2,000 copies

Examples of Cost Data Summaries

Costs are figured by taking the hourly salary of the relevant staff member(s) then multiplying that figure by the hours and/or parts of hours spent on the activity of interest. For example, staff costs for production of a project philosophy pamphlet totaled $93.12, or 12 hours at $7.76 per hour. Indirect costs and fringe benefits are not entered into the data presented here; however, both could easily be added by including a proportional amount in the hourly wage figures. Other relevant costs are also added into the cost when recording on the Cost Record Form. Travel expenses include both hourly wages of staff members who are actually traveling and 17¢ per mile times the total mileage involved in a particular trip. Material costs include those for paper, office supplies, xeroxing, and consumable resouces.

Once data are collected and recorded, they can be summarized in a variety of ways. Displays of representative costs on project activities are shown below.

Sample Cost Data for Different Products

Product	Staff Costs	Materials Costs	Total Costs
Advisory Council Meeting	7 hrs./105.78	25.00	130.78
Agreement with Child Development Center	12 hrs./ 93.12	-----	93.12
Evaluation Lattice	40 nrs./310.40	14.50	324.90

Home Based Programs: Average Cost Per One Hour Home Visit

Child	Direct Service	Planning	Travel	Total Cost Per Hour Visit
1	7.76	4.70	12.04	24.50
2	7.76	6.26	18.21	32.23
3	7.76	5.82	-----	13.58
4	7.76	4.85	12.38	24.99

Center Based Programs: Average Cost Per Hour

Child	Direct Service	Planning	Travel	Total Cost Per Hour
1	5.63	7.08	-----	12.71
2	5.59	2.87	-----	8.46

Follow-up Visits: Average Cost Per One Hour Visit

Child	Direct Service	Planning & Consulting	Travel	Total Cost Per Hour
1	7.76	3.10	-----	10.86

Conclusion

There are at least three cautions with respect to the above examples. First, the recorded costs may not represent all costs for a given objective, even of project resources. Also, outside personnel, for example, families of handicapped children, may expend time and money to serve their children that is not shown on the existing form. Second, some costs are difficult to record, for example, secretarial time receiving phone calls. Finally, such an accounting system itself is quite costly. Any decision to extensively collect such data should be evaluated in terms of the cost-benefit to the project.

Advantages of using the system for collecting and analyzing cost information are threefold. First, it provides a workable breakdown of project costs which can be used in making judgements related to various activities. Those judgements can then be used in making management decisions about the project and its operation. Second, the cost information provides a sound basis for future planning since it conveys a clear picture of the amount of money different activities are likely to cost. Additionally, a clearer notion of the resources that are likely to be necessary to accomplish those activities is also provided. A third benefit lies in the area of accountability. Use of the system results in staff who seem to have a much greater sense of accountability as well as a more defined focus in terms of their own job efforts.

COLLECTING COST ANALYSIS DATA IN A RURAL HOME-BASED INFANT PROJECT: THE MACOMB 0-3 REGIONAL PROJECT

Patricia L. Hutinger

The Macomb 0-3 Project, a rural home-based program for handicapped children from birth to three and their families, has developed a comprehensive system for collecting cost data on an ongoing basis. Depending upon the analysis procedures used, it can provide a variety of data that is either highly specific or relatively general. During the three-year model development phase, a computer-based system, the Staff Activities Accountability Program (SAAP) was adapted from a system used by William Gingold's project in Fargo, North Dakota. Gingold's work was later reported in Cost Accounting and Accountability (see Gingold, 1980). The Macomb 0-3 Project's SAAP system is used to code and record ongoing data related to time and a broad range of project activities as they are accomplished. It also captures information about time spent by staff members in various locations in contacts with specific clients. When used in conjunction with salary figures on a per hour basis (with fringe benefits figured into the amount) fairly specific costs for selected discrete activities can be identified.

Although SAAP can be used as a cost accountability instrument, it also is useful for other functions. As the staff used SAAP, it soon became apparent that there were many additional benefits when staff members documented the time they spent on various activities. When analyzed, such activity data yield often surprising and almost always useful information. Certainly SAAP has proven to be an effective instrument for determining specific job descriptions and duties among the staff members, based on past data. From the director's point of view, the SAAP print-outs yield a comprehensive overview of the entire project, including information related to percentage of time spent on delivery of services, dissemination, writing and editing, administrative activities, evaluation, and inservice.

System Structure

The SAAP System is divided into five major categories: 1) staff identification, 2) elapsed time, 3) contacts, including specific clients, 4) locations, and 5) activities. Time is converted into hours and fractions of hours by the computer program. The contact category provides an identification for each family receiving services, in addition to general codes for public schools and agency personnel. The location category includes hospitals, schools, government buildings, homes of client families, and other sites needed for documentation.

The categories in SAAP include five program components: 1) Entry System, 2) Delivery of Services, 3) Assessment and Evaluation, 4) Intra-Organizational Services, and 5) Community Services. The first three components provide direct information regarding service delivery to children and families. Entry system activities are related to children entering the program. The fourth component, Intra-Organizational Services, includes both activities related to service delivery and to aspects of administration and operation of a model demonstration program. Community Services contains activities indirectly related to both service delivery and model development. For actual service delivery costs, the first three components and a portion of the fourth are of primary interest.

One of the advantages of this division of categories, or factors, is the capability for extracting many kinds of information from the stored data bank. Both general data and highly specific, diary-like data is provided by SAAP. The provision of small, discrete data units, as opposed to data of a more general nature, leads to specific and descriptive information related to the functioning of staff members of an infant project. Data can be grouped and recalled in general categories or in combinations of specific items of interest for providing an answer to a specific cost question.

Daily activities are coded on a weekly record sheet, then each entry is keypunched into a data card and stored in a data file. Data are analyzed through use of SPSS (Statistical Package for the Social Sciences) programs, "Breakdown" or "Cross Tabs," Many combinations of data may be obtained, such as an analysis of Time x Person x Major Activity, Time x Person x Location, or Time x Contact x Activity. Other combinations are available as needed. Data recall is possible through use of a portable computer terminal and telephone, by taking the deck of cards to the computer terminal, or by online terminals. When reports are due, it is a simple matter to go to the computer bank of stored data related to staff activities to determine the number of hours that are spent with particular clients in accomplishing specific activities. One can easily find how many hours staff member 02 spent with family 072 in home visits, sharing centers, or in evaluation activities.

For example, Table 1 shows the number of hours spent by staff members in selected activities during a 10.5 month period, while Table 2 shows examples of the time spent by Child Development Specialists with some of the families in their caseloads in the same time period. Table 3 shows examples of more general documentation, the time spent with selected families in major program components in 10.5 months. Table 4 provides an example of yet another way the same data can be analyzed. It shows the number of hours spent in major program components in selected locations.

Table 1. Total Hours Spent by Staff in Individual Activities

Activity #	Activity	Hours
102	Home Visits	661.6
105	Sharing Centers	51.2
106	Parent Study Group	7.5
111	Water Activities	21.9
203	Diagnostic Evaluation	25.8
205	Speech, Language Evaluation	6.5
206	Hearing Evaluation	5.2
208	Physical Evaluation	52.5
211	Computer Evaluation	27.6

Source: Program Performance Report for Handicapped Children's Early Education Program, Department of Health, Education & Welfare, Office of Education, Bureau of Education for the Handicapped, July 1, 1977 - July 31, 1978, p. 52.

Table 2. Time Spent by Staff in Direct Services With Selected Individual Families*

Staff Member	Family #	Hours
Child Development Specialist II	(collective)**	19.3
	048	.7
	022	9.2
	047	5.9
	018	10.1
	063	4.2
	029	9.5
Child Development Specialist III	(collective)**	29.2
	020	31.7
	024	10.5
	030	17.5
	063	7.0
	031	18.5
Child Development Specialist IV	(collective)**	44.1
	030	4.1
	020	3.4
	046	23.6

*Does not reflect total family population
**Families collective means more than one family together at one time

Source: Program Performance Report for Handicapped Children's Early Education Program, Department of Health, Education & Welfare, Office of Education, Bureau of Education for the Handicapped, July 1, 1976 - June 30, 1977, Appendix J, p. 5-8.

Table 3. Time Spent by Staff Members With Family Contacts in Major Program Components

Family #	Activity	Hours
016	Direct Services	28.5
	Screening, Assessment, Evaluation	2.0
	Intra-Organizational Services	.4
021	Direct Services	24.7
	Screening, Assessment, Evaluation	2.3
	Intra-Organizational Services	2.0
	Community Services	.2
028	Direct Services	36.5
	Screening, Assessment, Evaluation	3.0
	Intra-Organizational Services	2.0
046	Direct Services	18.2
	Screening, Assessment, Evaluation	3.0
	Intra-Organizational Services	3.2
	Community Services	.4
050	Direct Services	13.7
	Screening, Assessment, Evaluation	1.0

Source: Program Performance Report for Handicapped Children's Early Education Program, Department of Health, Education & Welfare, Office of Education, Bureau of Education for the Handicapped, July 1, 1976 - June 30, 1977, Appendix J, p. 18-21.

Table 4. Time Spent by Staff x Location x Program Components

Location	Activity	Hours
Macomb YMCA	Direct Services	20.3
	Intra-Organizational Services	1.4
	Community Services	2.0
McDonough County Day Care	Direct Services	23.8
	Screening, Assessment, Evaluation	4.0
	Intra-Organizational Services	4.7
	Community Services	6.8
McDonough County Church	Direct Services	28.0
	Community Services	2.0
Fulton County Nursing Shome	Direct Services	26.0
	Screening, Assessment, Evaluation	.9
	Intra-Organizational Services	.5
	Community Services	.5

Source: Program Performance Report for Handicapped Children's Early Education Program, Department of Health, Education & Welfare, Office of Education, Bureau of Education for the Handicapped July 1, 1977 - July 31, 1978, Appendix G, p. 15-17.

System Operation

The SAAP activity data is recorded daily by Project staff, and is classified by date, location, contact, activity, the number of persons involved, and the staff member's identification number. A sample coding sheet is shown in Figure 1. The system for coding is kept as simple as possible. The staff member records approximately how much time he or she spends on a particular activity. This may be as little as five minutes or as much as eight hours.

Figure 1. Sample Coding Sheet

Weekly Event Record

Macomb 0-3 Regional Project

Week of 12/18-12/22/78 Staff Person Cathy Hommel

Date Yr-Mo-Day	Contacts	Activity Code	Time Hrs	Time Mins	Location	Staff ID#	Description of Activity & Comments
78-12-18	099	311		20	001	31	Gather toys
78-12-18	099	323	1		029		Travel
78-12-18	076	102	1		010		Home Visit - F.
78-12-18	208	102	1		010		Home Visit - A.
78-12-18	112	102	1		010		Home Visit - L.
78-12-18	014	305		40	001		Discussion & Participation
78-12-18	099	320		15	001		Weekly Event Record
78-12-18	014	303	1	15	001		Staff meeting
78-12-18	014	317		45	001		Supervise 0-3 Assistant
78-12-18	099	315		35	001		Plan
78-12-19	099	311		15	001		Gather toys
78-12-19	206	102	1		010		Audio-Visuals
78-12-19	099	323	1	15	029		Travel
78-12-19	099	320		10	001		Weekly Event Record
78-12-19	099	315	4		001		Phone call, plan, update file, letters
78-12-19	110	102	1		010		Home Visit - U.
78-12-20	030	102	1		010		Home Visit - M.
78-12-20	203	102	1		010		Home Visit - B.
78-12-20	099	323	1	10	029		Travel

An effort has been made to include all the activities in which a staff member engages in order to determine costs for particular kinds of activities. For example, a record is kept of the number of hours each staff member spends with each client. The hours spent on computer evaluation (keypunching and running various programs to analyze the data and the storage) are also documented. Activities provide detailed information necessary to determine what kinds of things people in infant projects do, how much time they spend, with whom they engage in these activities, where activities occur, and the cost of such a program. The cost analysis results as a final product after all staff members in the 0-3 Project record their activities on a daily basis and the data are analyzed for a selected time period.

Routine procedure calls for staff members to turn their recording sheets in to the Project coordinator each Monday. It is desirable for each staff member to record activities day by day, since emphasis is placed on the amount of time spent on various activities. These records are only as accurate as the recording of the individuals involved. If faulty information is processed, the result is also faulty. For example, if someone waits until the end of the week to do the recording for an entire week, the estimates on how much time was spent on particular activities is apt to be inaccurate and render the data useless for most practical purposes, as well as for scientific exploration. The focus of SAAP is on staff activities. The project uses another type system for recording child progress and parent satisfaction.

Routine Start-up Problems

Recording SAAP activities takes approximately 45 to 60 minutes per week per staff member. In the beginning, recording all information in the various categories of the SAAP program seems a cumbersome activity. Once the staff learns the coding system, the next step involves mutual agreement as to the categorization of common activities. This is an area where problems arise. For instance, one staff member may code a staff in-service as a 'conference' while another may code it as 'in-service.' If ambiguous coding takes place over a prolonged period of time, the data produced are inaccurate and do not reflect a precise picture of what occurs in the project. The problem of varied interpretation of specific activities can be reduced to a minimum by staff meetings at which confusion and ambiguities are resolved through a consensus of definition by the staff members involved in the activities in question. Once mutual understanding and familiarity with the coding system have been achieved, the task of daily coding becomes far less burdensome and the data are more reliable.

Examples of Cost Data Generated from the SAAP System

Analysis of SAAP data can be used to obtain cost figures on any activity or group of activities engaged in by the Macomb 0-3 Project staff. The data presented represents a time period of ten and one-half months during the Project's third demonstration year (1977-78). A sample of selected activities and their cost is contained in Table 5. The Child Development Specialist (CDS's) each served approximately 15 children for a full caseload. The number of children varied from time to time, depending upon the geographical location of the child's family and travel time. During this period Macomb 0-3 CDS's spent slightly more time in traveling than they spent in actual home visits. Travel included travel to conferences, sharing centers, in-service, and for dissemination purposes, in addition to travel to homes. The number of hours spent in home visits does not include other time spent with children and families in sharing centers, evaluation, and parent study groups. Child evaluation done by individuals, such as language specialists or occupational therapists who were not part of the Macomb 0-3 staff is not documented in the present data. Evaluation by other professionals is evidenced on the child information sheets kept by the Project.

Table 5. Sample of Hours and Cost for Selected Activities for a 10.5 Month Period according to SAAP Data*

Activities	Hours	Total Cost
Interview	29	180.96
Referral	14	87.36
Locating Referral	7	43.68
Referral to Other Agency	4	24.96
Home Visit	662	4130.88
Attempted Home Visit	11	68.64
Sharing Centers	51	318.24
Parent Study Group	7	43.68
WADE	22	137.28
Transportation (of families)	15	93.60
Diagnostic Evaluation	26	162.24
Speech and Language Evaluation	7	43.68
Hearing Evaluation	5	31.20
Physical Evaluation	53	330.72
Computer Evaluation	28	174.72
Staff Evaluation	7	43.68
Parent Evaluation	3	18.72
Direct Service Staff Meeting	164	1023.36
Materials Preparation	171	1067.04
Curriculum Development	177	1104.48
Client-Related Administration	631	3937.44
Toy Production	19	118.56

* Hours for entire direct service staff are included in this sample. Cost are figured at actual salary costs in 1977-78, $6.24 per hour. Fringes are not included in this figure.

Table 6 shows the percent of hours spent by various Project staff members in major program components for the ten and one-half month period. While only 10% of staff time was spent on direct services to children and families, it is important to note that indirect service delivery, a component intimately associated with direct services to children, occupied 55% of staff time. Also related to direct services is the community service component, which occupied 9% of total staff time. All Project members spent about 79% of total time on intra-organizational activities. Development of the model assumed a major priority in addition to serving handicapped young children; however, only 15% of total staff time was spent on those activities. Community Services contained activities relating to dissemination of information about the Project to various service groups and local agencies. Practically, it encompassed the continuing awareness activity needed to obtain greater public interest in the Project's activities. Time spent in this category, 9% of total staff time, resulted in establishing effective channels of communication so that referrals are made to the Project from many different sources including physicians, parents, interested persons, public health nurses, homemakers from the Department of Children and Family Services, and school people.

Table 6. Percent of Time Spent by Macomb 0-3 Staff in Major Program Components for a 10.5 Month Period

	Direct Service Delivery			Intra-Organizational			
Staff Member	System Entry	Direct Services	Screening Assessment	Indirect Serv. Delivery	Model Develop.	Confounded*	Community Services
Director	-	-	-	50%	36%	2%	10%
Coordinator	1%	1%	1%	53%	18%	12%	16%
Child Dev. Spec. I	1%	19%	2%	50%	7%	11%	6%
Child Dev. Spec. II	1%	15%	1%	63%	5%	3%	11%
Child Dev. Spec. III	1%	4%	1%	64%	10%	10%	8%
Child Dev. Spec. IV	1%	16%	2%	53%	7%	13%	6%
Total % of All Staff Time Spent in Components	1%	8%	1%	55%	15%	9%	9%

* Activities in this component encompassed both model development and indirect service.

Procedures used in SAAP could easily be adapted by other rural projects using the data storage and retrieval capacities of a microcomputer. The SAAP system, which can be used to document staff activities on an ongoing basis, provides a variety of information that can be used to establish accurate cost figures on project operation. Easily adopted to fit a variety of needs, SAAP has proven useful in both service delivery and in an adopted version, for Outreach activities.

BIBLIOGRAPHY

Gingold, W. Cost Accounting and Accountability (For Early Education Programs for Handicapped Children), Fargo, North Dakota: Southeast Mental Health and Retardation Center, September, 1980.

Hutinger, P. Macomb 0-3 Regional Project. Program Performance Report for Handicapped Children's Early Education Program, Department of Health, Education & Welfare, Office of Education, Bureau of Education for the Handicapped. July 1, 1976 - June 30, 1977, July 1, 1977 - July 31, 1978.

About the HCEEP Rural Network

The Handicapped Children's Early Education Program (HCEEP) Rural Network is an association of professionals representing educational programs for young handicapped children in rural communities. Members are drawn primarily from projects supported by the HCEEP, Office of Special Education, Department of Education. Formed in 1978, the Rural Network undertook to provide a voice for rural America's young handicapped children and their families. The network aimed to increase educational opportunities for this population through the accomplishment of a variety of activities. Participating projects also intended to enhance their own effectiveness in providing educational and supportive services in rural areas. For further information, contact:

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